Environmental Remote Sensing Using the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)

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The ASTER instrument, now in orbit aboard NASA's EOS Terra satellite, has been provided by the Japanese Ministry of Economics, Trade and Industry, (METI), and It acquires data at high spatial resolution (15-90 m) in 14 wavelength bands from the visible through the thermal infrared. Instrument operations, calibration, algorithm development and validation, data processing, are performed jointly by the U.S. and Japanese.

Data have now been acquired for most of the land surface of the Earth. Data products now available include top of atmosphere radiance, surface spectral radiance, temperature and spectral emissivity, digital elevation models (local areas only), and a polar cloud mask. These data are being used for the monitoring of volcanoes, glaciers, urban development, and land surface change. They are also useful for determining and checking sub-grid scale quantities in regional to global models of such variables as NDVI, surface heat flux elements, etc.

This work was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration.